A simple model for the thermal radiation spectrum of a system with non-uniform temperature

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Using a simple model, we show that the thermal radiation from a system with non-uniform temperature can exceed the intensity of an isothermal blackbody with the same average temperature. The results might be relevant for recent observations of exceedingly high thermal emission from tungsten photonic crystals. Our results point to the importance of the detailed temperature distribution in the sample for understanding the emission phenomena. We will also model the possible development of hotspots in the experimental system.